

IN THE CLAIMS:

Please cancel claims 1-5 without prejudice or disclaimer to the subject matter therein.

Please add new claims 6-11 as follows.

6. A signal transmission and receiving apparatus for transmitting and receiving a VSB modulated signal having information of a first data stream and a second data stream, the apparatus comprising a transmission apparatus and a receiving apparatus,

said transmission apparatus comprising:

- an interleaver operable to interleave the second data stream to produce an interleaved data stream;

- a modulator operable to modulate the first data stream, without being interleaved, to an m-level VSB modulated signal and modulate the interleaved data stream to an n-level VSB modulated signal, n being an integer larger than m,

wherein the first data stream has information representing the value of n; and

- a transmitter operable to transmit the m-level VSB modulated signal and the n-level VSB modulated signal;

said receiving apparatus comprising:

- a demodulator operable to demodulate the m-level VSB modulated signal to the first data stream and demodulate the n-level VSB modulated signal to a demodulated data stream,

wherein the demodulated data stream is reproduced according to the information representing the value of n; and

- a de-interleaver operable to de-interleave the demodulated data stream to the second data stream.

7. A signal transmission apparatus for transmitting a VSB modulated signal having information of a first data stream and a second data stream, the apparatus comprising:

- an interleaver operable to interleave the second data stream to produce an interleaved data stream;

- a modulator operable to modulate the first data stream, without being interleaved, to an m-level VSB modulated signal and modulate the interleaved data stream to an n-level VSB modulated signal, n being an integer larger than m,

wherein the first data stream has information representing the value of n; and

- a transmitter operable to transmit the m-level VSB modulated signal and the n-level VSB modulated signal.

8. A signal receiving apparatus comprising:

- a receiver operable to receive a transmitted VSB modulated signal,

wherein said transmitted VSB modulated signal includes an m-level VSB modulated signal and an n-level VSB modulated signal, n being an integer larger than m;

- a demodulator operable to demodulate the m-level VSB modulated signal to a first data stream having information representing the value of n and demodulate the n-level VSB modulated signal to a demodulated data stream, the first data stream without being interleaved and the demodulated data stream being interleaved,

wherein the demodulated data stream is reproduced according to the information representing the value of n; and

- a de-interleaver operable to de-interleave the demodulated data stream to a second data stream.

9. A signal transmission and receiving method for transmitting and receiving a VSB modulated signal having information of a first data stream and a second data stream, the method comprising a transmission method and a receiving method,

said transmission method comprising:

- interleaving the second data stream to produce an interleaved data stream,

- modulating the first data stream, without being interleaved, to an m-level VSB modulated signal and modulating the interleaved data stream to an n-level VSB modulated signal, n being an integer larger than m,

wherein the first data stream has information representing the value of n; and

- transmitting the m-level VSB modulated signal and the n-level VSB modulated signal;
said receiving method comprising:
- demodulating the m-level VSB modulated signal to the first data stream and demodulating
the n-level VSB modulated signal to a demodulated data stream,
wherein the demodulated data stream is reproduced according to the information representing
the value of n; and
- de-interleaving the demodulated data stream to the second data stream.

10. A signal transmission method for transmitting a VSB modulated signal having information
of a first data stream and a second data stream, the method comprising:

- interleaving the second data stream to produce an interleaved data stream;
- modulating the first data stream, without being interleaved, to an m-level VSB modulated
signal and modulating the interleaved data stream to an n-level VSB modulated signal, n being an
integer larger than m,

wherein the first data stream has information representing the value of n; and

- transmitting the m-level VSB modulated signal and the n-level VSB modulated signal.

11. A signal receiving method comprising:

- receiving a transmitted VSB modulated signal,

wherein said transmitted VSB modulated signal includes an m-level VSB modulated signal
and an n-level VSB modulated signal, n being an integer larger than m;

- demodulating the m-level VSB modulated signal to a first data stream having information
representing the value of n and demodulating the n-level VSB modulated signal to a demodulated
data stream, the first data stream without being interleaved and the demodulated data stream being
interleaved,

wherein the demodulated data stream is reproduced according to the information representing
the value of n; and

- de-interleaving the demodulated data stream to a second data stream.